

Message Text

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ACTION OES-07

INFO OCT-01 EA-12 ISO-00 SOE-02 AID-05 CEA-01 CIAE-00

COME-00 DODE-00 EB-08 H-02 INR-10 INT-05 L-03

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FOR OES/NET/IM

E.O. 11652: N/A

TAGS: ENRG, TECH, JA

SUBJECT: GOJ SOLAR THERMAL ELECTRIC POWER SYSTEM

1. TAKASHI HORIGOME, CHIEF, ENERGY SYSTEM SECTION, ENERGY DIVISION, ELECTROTECHNICAL LABORATORY (ETL), AIST/MITI, RECENTLY ANNOUNCED PLANS FOR THE CONSTRUCTION OF JAPAN'S FIRST SOLAR THERMAL POWER GENERATION PLANT AT AN ETL-SPONSORED MEETING ON NEW ENERGY TECHNOLOGY R&D RESULTS.

2. TO BE BUILT ON A 100,000 SQUARE METER TRACT OF LAND, FORMERLY A SALT FARM, FACING THE INLAND SEA OF SETO NEAR NIO TOWN IN KAGAWA PREFECTURE, SHIKOKU, THE TWO-UNIT PILOT PLANT WILL BE COMPLETED IN 1981 AND WILL BEGIN TRANSMITTING POWER FOR ABOUT 10 HOURS DAILY. EACH UNIT WILL HAVE AN OUTPUT OF 1,000 KW. OPERATION OF THE PLANT IS INTENDED TO PROVIDE AN EXPERIMENTAL BASE FOR NEXT STAGE OF PROJECT, CONSTRUCTION OF A 10,000 KW DEMONSTRATION PLANT.

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3. THE SITE OF PILOT PLANT IS CONSIDERED IDEAL FOR UTILIZATION OF SOLAR ENERGY BECAUSE THE ANNUAL RAINFALL IS "ONLY" 1,000 MILLIMETERS, HALF OF THE NATIONAL AVERAGE, AND THE DURATION OF SUNSHINE AVERAGES 6 HOURS DAILY WHICH IS MORE THAN THE NATIONAL AVERAGE. THE SITE HAS BEEN CHOSEN FROM AMONG EIGHT CANDIDATE SITES.

4. THE PLANT CONSISTS OF TWO DIFFERENT UNITS, DEVELOPED BY HITACHI AND MITSUBISHI HEAVY INDUSTRIES RESPECTIVELY. MITSUBISHI IS WORKING ON THE POWER TOWER CONCEPT. THE TOWER, 65 METERS HIGH, IS SURROUNDED BY 807 REFLECTING MIRRORS, EACH 4 METERS SQUARE, TRACKING THE SUN AND REFLECTING THE SUNLIGHT TO HEAT ABSORBER ATOP THE TOWER. THE HITACHI SYSTEM CONSISTS OF 26 REFLECTOR RACKS, EACH WITH AN ARRAY OF 100 REFLECTING MIRRORS. EACH MIRROR IS 1.5 METERS HIGH AND 3 METERS WIDE. SUNLIGHT IS REFLECTED FROM THE MIRRORS INTO PLANE PARABOLIC MIRRORS WITH VACUUM THERMAL COLLECTOR PIPES AT THE FOCI. THE HEAT STORAGE SYSTEM TO BE USED BY MITSUBISHI CALLS FOR STORING HOT WATER IN PRESSURE TANKS, WHILE THAT OF HITACHI USES THE MITSUBISHI METHOD PLUS ITS OWN MOLTEN SALT STORAGE SYSTEM, WHICH EMPLOYS A MIXTURE OF POTASSIUM CHLORIDE AND LITHIUM CHLORIDE.

5. IN 1978 AND 1979, DESIGN AND MANUFACTURE OF EQUIPMENT AND BASIC CONSTRUCTION WORK WILL BE UNDERTAKEN. INSTALLATION OF EQUIPMENT WILL BEGIN IN 1979 FOR THE MITSUBISHI SYSTEM AND IN 1980 FOR THE HITACHI SYSTEM. AFTER TRIAL OPERATION OF BOTH SYSTEMS, ALL FACILITIES WILL BE DISMANTLED. THE COST OF CONSTRUCTION REQUIRED FOR THE TWO SYSTEMS TOTALS ABOUT YEN 10 BILLION. PROJECT WILL BE UNDER THE MANAGEMENT OF ELECTRIC POWER DEVELOPMENT
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COMPANY'S SUNSHINE PROJECT HEADQUARTERS, WITH TL PROVIDING TECHNICAL SUPPORT AND EVALUATION OF TECHNICAL DATA NEEDED TO CARRY OUT THE SECOND PHASE PROJECT FOR BUILDING THE 10,000 KW DEMONSTRATION PLANT. MANSFIELD

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